

# What the experts say

## The role of pneumonia and sepsis

Leading institutions in healthcare recognize sepsis as a significant challenge. Sepsis is a blood stream infection that creates a cascade of bodily responses, which can ultimately result in organ failure and/or death.<sup>1</sup> Sepsis is one of the leading causes of death in the United States,<sup>2</sup> with a 34.7 to 52% mortality rate in hospitals.<sup>3</sup> Sepsis affects more than one million people a year and causes 258,000 deaths annually in the U.S.<sup>4</sup> Furthermore, the treatment of sepsis costs the U.S. healthcare market \$24 billion per year, making it the number one hospitalization cost in the country.<sup>5</sup> Individually, sepsis costs an average of \$20,000 - \$40,000 per hospital stay.<sup>6</sup> While any infection can lead to sepsis, respiratory infections are the most common precipitating condition.<sup>7</sup> Below is a summary of some of the evidence highlighting the relationship between pneumonia and sepsis.

### Recommendations & guidelines

#### Centers for Disease Control and Prevention (CDC) 2017<sup>1</sup>

- “Sepsis is often associated with infections of the lungs (e.g., pneumonia)...”

#### Association for Professionals in Infection Control and Epidemiology (APIC) 2015<sup>4</sup>

- “Any type of infection can lead to sepsis, but sepsis is most often associated with pneumonia...”

#### Mayo Clinic 2016<sup>8</sup>

- “While any type of infection – bacterial, viral or fungal – can lead to sepsis, the most likely varieties include: pneumonia...”

#### Sepsis Alliance 2017<sup>9</sup>

- “Sepsis and septic shock can result from an infection anywhere in the body, including pneumonia.”

#### Health Care Utilization Project database (AHRQ) 2017<sup>10</sup>

- Sepsis developed in 36.3% of patients with non-ventilator hospital-acquired pneumonia (NV-HAP).
- Sepsis developed in 1.9% of the Community Acquired Pneumonia patients (matched cohort).

#### American Hospital Association (AHA), Health Research and Educational Trust (HRET), U.S. Department of Health and Services (HEN) 2014<sup>11</sup>

- “Establish and implement protocols to reduce postoperative pneumonia in patients who will receive general anesthesia.”
- “Consider a pre-operative CHG oral rinse the night before and the morning of surgery to reduce the risk of post-operative pneumonia for those who will be receiving general anesthesia.”

### Published outcomes

#### Severe sepsis and septic shock.<sup>12</sup>

- “Pneumonia is the most common cause [for sepsis], accounting for about half of all cases...”

#### The Role of Infection and Comorbidity: Factors that Influence Disparities in Sepsis 2006<sup>7</sup>

- The most common type of infection causing sepsis are respiratory infections.

# What the experts say

## The role of pneumonia and sepsis

### Published outcomes (cont.)

#### Implications of the new international sepsis guidelines for nursing care.<sup>13</sup>

- “General principles of caring for any patient undergoing mechanical ventilation continue to be relevant to patients with sepsis.”

#### Non-Ventilator Hospital Acquired Pneumonia Versus Pneumonia as an Admission Diagnosis in Patients Who Develop Sepsis: Incidence and Cost.<sup>10</sup>

- “Sepsis incidence associated with NV-HAP (non-ventilator associated pneumonia) was 19 times greater than that associated with AP (admitted pneumonia) (36.3% vs 1.9%). LOS was significantly longer and total hospital charges were significantly greater for patients with sepsis associated with NV-HAP (both  $P < .001$ ). The risk of sepsis developing was 28.8 times greater with NV-HAP than with AP.”

#### References:

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